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Abstracts

Anthelmintic resistance in strongylid nematodes parasitizing wild equids (Equidae): the first finding of resistance in the Askania Nova Biosphere reserve, Ukraine

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Anthelmintic resistance in nematode parasites of livestock, including domestic horses, is widespread throughout the world. Regarding domestic horses, the resistance in nematodes – small strongylides (Cyathostominae) to benzimidazole anthelmintic (BZ) drugs is the biggest problem nowadays. In Europe, the BZ-resistance in cyathostomes of domestic horses was detected in many countries, including Ukraine. However, no data on the presence of BZ-resistance in wild equids have been published to date. The purpose of our work was to study the manifestations of the BZ-resistance in domestic and wild equids kept in the Askania Nova Biosphere Reserve, Ukraine.

The Biosphere Reserve "Askania Nova" is situated in the steppe zone of South Ukraine (46°29' North and 33°58' East). Six species of equids: wild Przewalski's horses (*Equus ferus przewalskii*), donkeys (*E. asinus*), Turkmen kulans (*E. hemionus*), plain zebras (*E. burchelli*), mountain zebras (*E. grevyi*), domestic horses and Shetland ponies (*E. caballus*) are kept in large enclosures of the Reserve under semi-free conditions. Regular monitoring studies of the level of infection of all these equid species are performed twice a year by the coprologic McMaster method (Herd, 1992) with sensitivity of 25 eggs per gram of feces (EPG). According to the results of coprological examination, animals are treated with anthelmintics; mostly the benximidazole drugs of various producers containing albendazole are used. Coprological data (EPG values) collected before and after anthelmintic treatments of various equids from 2009 to 2017 were re-analyze using the WAAVP protocol for the Fecal Egg Count Reduction Test (FECRT) (Coles *et al.,* 2006).

The FECRT for BZ drug "Albendazole-10%" (ZooVetPromSnab, Ukraine) was performed in March 2019 on four species: domestic horses and ponies, donkeys, plain and mountain zebras. All animals were examined on presence of gastrointestinal parasites; the most infected animals (n=90) were dewormed by the "Albendazole-10%" in dosage of 0.75 g per 10 kg of body weight. Coprologic examinations of all animals were performed on the 0 Day (before treatment) and on the 14th day after treatment. The FECRT was performed according to the WAAVP protocol.

The preliminary results of long-term monitoring studies (2009 to 2017) revealed a decrease of efficacy the BZ drugs in wild and domestic equids. The first signs of presence of BZ resist-